

Application No. 10/822,548

AMENDMENTS TO THE CLAIMS

A detailed listing of all claims that are, or were, in the present application, irrespective of whether the claim(s) remains under examination in the application are presented below. The claims are presented in ascending order and each includes one status identifier

PENDING CLAIMS (1550.36-US-03):

1. (Original) A method for constructing a part of a tooth using a hardened object, said method comprising:

(i) forming a hardenable object into a shape suited for reconstructing part of a tooth from a microwave curable composition comprising:

(a) multi-functional polymers and monomers at least one member selected from the group consisting of mono-functional methacrylate polymer, di-functional methacrylate polymer, tri-functional methacrylate polymer, mono-functional methacrylate monomer, di-functional methacrylate monomer, and tri-functional methacrylate monomer; filler; coupling agent; initiator; plasticizer; and optionally additional additives for pigmenting; or

(b) a polymer matrix including a polymerizable resin adapted for use in an oral environment which contains at least one ester of unsaturated compounds; coupling agent; filler; initiator; and; optionally, additional additives for pigmenting; and

(ii) using a hand held microwave source to apply microwave energy to harden said hardenable object.

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2. (Original) A method according to claim 1, wherein said composition is (a).
3. (Original) A method according to claim 1, wherein said filler comprises inorganic filler or organic filler.
4. (Original) A method according to claim 1, wherein (b) comprises a polymer matrix including a polymerizable resin adapted for use in an oral environment; filler; initiator; coupling agent; and, optionally, additional additives for pigmenting.
5. (Original) A method according to claim 4, wherein the polymerizable resin comprises at least one of 2,2-bis[4-(2-hydroxy-3-methacryloxypropoxy) phenyl] propane, triethyleneglycol dimethacrylate, or an urethane dimethacrylate resin.
6. (Original) A method according to claim 1, wherein said composition comprises (b).
7. (Original) A method according to claim 6, wherein said initiator comprises at least one microwave sensitive compound.
8. (Original) A method according to claim 7, wherein said initiator is a peroxide.

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9. (Original) A method according to claim 8, wherein the initiator is selected from the group comprising benzoyl peroxide and dilauroyl peroxide.
10. (Original) A method according to claim 7, wherein said composition contains up to 2.5% by weight of said initiator.
11. (Original) A method according to claim 1, wherein (a) further comprises an amine accelerator.
12. (Original) A method for forming a hardened relining material for a dental prosthesis comprising:
- (i) forming a hardenable object configured for relining a dental prosthesis from a microwave curable composition comprising a polymer matrix including a polymerizable resin adapted for use in an oral environment; filler; initiator; coupling agent; and optionally, additional additives for pigmenting; and
 - (ii) using a hand held microwave source to apply microwave energy to harden said hardenable object.
13. (Original) A method according to claim 12, wherein the polymerizable resin contains at least one of 2,2-bis[4-(2-hydroxy-3-methacryloxypropoxy) phenyl] propane, triethyleneglycol dimethacrylate, or an urethane dimethacrylate resin.

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14. (Original) The method of claim 12, wherein said filler comprises inorganic filler or organic filler.

15-16. (Canceled).

17. (Original) The use of a hand-held microwave applicator to harden polymers and polymer containing composites at the site of application (i.e., intra-oral, orthopedic).

18-29. (Canceled).

30. (Original) A method for forming a hardened reline material for a dental prosthesis comprising:

(i) forming a hardenable object configured for relining a dental prosthesis from a microwave curable composition comprising a polymer matrix including a polymerizable resin adapted for use in an oral environment; filler; initiator; coupling agent; and optionally, additional additives for pigmenting; and

(ii) using a hand held microwave source to apply microwave energy to harden said hardenable object.

31. (Original) A method according to claim 30, wherein the polymerizable resin contains at least one of 2,2-bis[4-(2-hydroxy-3-methacryloyloxypropoxy) phenyl] propane, triethylene glycol dimethacrylate, or an urethane dimethacrylate resin.

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32. (Original) The method of claim 30, wherein said filler comprises inorganic filler or organic filler.

33. (Original) A method for forming a hardened object comprising:

(i) forming a hardenable object from a microwave curable composition comprising:

(a) at least one polymer including repeating monomer units represented by the formula



wherein

R₁ represents a hydrogen atom, an alkyl group, a substituted alkyl group, a benzyl group, a hydroxy alkyl group, a cyclic hydrocarbon, or an ether group,

R₂ represents a hydrogen atom, a halogen atom, an alkyl group, or a substituted alkyl group, and n is an integer of 2 or more;

a curing agent; a filler; an initiator; a plasticizer; and, optionally, additional additives for pigmenting;

(b) at least one member selected from the group consisting of an organopolysiloxane and a phosphonitrile fluoroelastomer; filler; crosslinking agent; and, optionally, additional additives for pigmenting; or

(c) a polymer matrix including a polymerizable resin adapted for use in an

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oral environment; filler; initiator; coupling agent and, optionally, additional additives for pigmenting; and

(ii) using a hand-held microwave source to apply microwave energy to harden said hardenable object.

34. (Original) A method according to claim 33, wherein the polymerizable resin contains at least one of 2,2-bis[4-(2-hydroxy-3-methacryloyloxypropoxy) phenyl] propane, triethyleneglycol dimethacrylate, or an urethane dimethacrylate resin.

35. (Original) A method according to claim 33, wherein said at least one phosphonitrile fluoropolymer is obtained by polymerizing monomers comprising:



wherein X represents a hydrogen atom or fluorine atom, n is a value of 1 to 11.

36. (Original) A method according to claim 33, wherein said organopolysiloxane is represented by the formula $[\text{R}_n\text{SiO}_{4-n/2}]_m$, wherein $n=1-3$ and $m>1$. R is methyl, longer alkyl, fluoroalkyl, phenyl, vinyl, alkoxy or alkylamino.

37. (Original) A method for forming a hardened object comprising:

(i) forming a hardenable object from a microwave curable composition, said object when cured comprising a dental prosthesis or an orthodontic element, said

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microwave curable composition comprising:

(a) at least one member selected from the group consisting of mono-functional methacrylate polymer, di-functional methacrylate polymer, tri-functional methacrylate polymer, mono-functional methacrylate monomer, di-functional methacrylate monomer, and tri-functional methacrylate monomer; curing agent, filler, initiator; plasticizer; and optionally, additional additives for pigmenting;

(b) at least one member selected from the group consisting of an organopolysiloxane and a phosphonitrile fluoroelastomer; filler; crosslinking agent; and optionally, additional additives for pigmenting; or

(c) a polymer matrix including a polymerizable resin adapted for use in an oral environment; filler; initiator; coupling agent; and; optionally, additional additives for pigmenting; and

(ii) using a hand-held microwave source to apply microwave energy to harden said hardenable object.

38. (Original) A method according to claim 37, wherein the polymerizable resin comprises at least one of 2,2-bis[4-(2-hydroxy-3-methacryloxypropoxy) phenyl] propane, triethyleneglycol dimethacrylate or an urethane dimethacrylate resin.

39. (Original) A method according to claim 37, wherein said hardened object comprises a dental prosthesis.

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40. (Original) A method according to claim 39, wherein said dental prosthesis comprises a composite resin filling, inlay, overlay, facing, veneer or orthodontic appliance.

41. (Original) A method according to claim 37, wherein said filler comprises organic filler or inorganic filler.